

In the Claims:

Claims 1 through 43 (cancelled).

44. (Previously Added) An antibody, or antibody fragment, that specifically binds to a Zins2 testis-specific insulin homolog polypeptide, wherein the Zins2 polypeptide has an amino acid sequence comprising SEQ ID NO:13.
45. (Previously Added) The antibody, or antibody fragment, of claim 44, wherein the antibody, or antibody fragment, is selected from the group consisting of: (a) a polyclonal antibody, (b) a murine monoclonal antibody, (c) a humanized antibody derived from (b), (d) a chimeric antibody, (e) a neutralizing antibody, (f) a single chain antibody, and (g) a human monoclonal antibody.
46. (Previously Added) The antibody fragment of claim 44, wherein the antibody fragment is selected from the group consisting of: (a) an F(ab')₂ fragment, (b) an Fab proteolytic fragment, and (c) an Fv fragment.
47. (Previously Added) The antibody, or antibody fragment of claim 44, wherein the antibody or antibody fragment, further comprises a radionuclide, enzyme, substrate, cofactor, fluorescent marker, chemiluminescent marker, peptide tag, magnetic particle, drug, or toxin.
48. (Previously Added) An antibody, or antibody fragment, wherein the antibody, or antibody fragment, specifically binds to an epitope of a Zins2 testis-specific insulin homolog polypeptide, wherein the Zins2 polypeptide has an amino acid sequence comprising SEQ ID NO:13.
49. Cancelled.
50. (Previously Added) The antibody of claim 48, wherein the antibody is selected from the group consisting of: (a) a polyclonal antibody, (b) a murine monoclonal antibody, (c) a humanized antibody derived from (b), (d) a chimeric antibody, (e) a neutralizing antibody, (f) a single chain antibody, and (g) a human monoclonal antibody.

51. (Previously Added) The antibody fragment of claim 48, wherein the antibody fragment is selected from the group consisting of: (a) an F(ab')₂ fragment, (b) an Fab proteolytic fragment, and (c) an Fv fragment.
52. (Previously Added) The antibody of claim 48, wherein the antibody or antibody fragment, further comprises a radionuclide, enzyme, substrate, cofactor, fluorescent marker, chemiluminescent marker, peptide tag, magnetic particle, drug, or toxin.
53. (Previously Added) An antibody comprising a monoclonal antibody that specifically binds to SEQ ID NO:13.
54. (Previously Added) The antibody of claim 53, wherein the antibody further comprises a radionuclide, enzyme, substrate, cofactor, fluorescent marker, chemiluminescent marker, peptide tag, magnetic particle, drug, or toxin.
55. (Previously Added) The antibody of claim 53, wherein the antibody is selected from the group consisting of: (a) a murine monoclonal antibody, (b) a humanized antibody derived from (a), (c) an antibody fragment, (d) a human monoclonal antibody, (e) a chimeric antibody, (f) a neutralizing antibody, and (g) a single chain antibody.
56. (Previously Added) An antibody, or antibody fragment, wherein the antibody, or antibody fragment, specifically binds to an epitope of a Zins2 testis-specific insulin homolog polypeptide, wherein the Zins2 polypeptide has an amino acid sequence consisting of SEQ ID NO:13.
57. (Previously Added) The antibody, or antibody fragment of claim 56, wherein the antibody, or antibody fragment, is selected from the group consisting of: (a) a polyclonal antibody, (b) a murine monoclonal antibody, (c) a humanized antibody derived from (b), (d) a chimeric antibody, (e) a neutralizing antibody, (f) a single chain antibody, and (g) a human monoclonal antibody.
58. (Previously Added) The antibody fragment of claim 56, wherein the antibody fragment is selected from the group consisting of: (a) an F(ab')₂ fragment, (b) an Fab proteolytic fragment, and (c) an Fv fragment.

59. (Previously Added) The antibody, or antibody fragment of claim 56, wherein the antibody or antibody fragment, further comprises a radionuclide, enzyme, substrate, cofactor, fluorescent marker, chemiluminescent marker, peptide tag, magnetic particle, drug, or toxin.
60. Cancelled.
61. (Currently Amended) The antibody of claim ~~64~~ 60, wherein the antibody is selected from the group consisting of: (a) a polyclonal antibody, (b) a murine monoclonal antibody, (c) a humanized antibody derived from (b), (d) a chimeric antibody, (e) a neutralizing antibody, (f) a single chain antibody, and (g) a human monoclonal antibody.
62. (Currently Amended) The antibody of claim ~~64~~ 60, wherein the antibody further comprises a radionuclide, enzyme, substrate, cofactor, fluorescent marker, chemiluminescent marker, peptide tag, magnetic particle, drug, or toxin.
63. (New) The antibody, or antibody fragment of claim 48, wherein the epitope is selected from the group consisting of:
- (a) an epitope consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 20 (Ser) to amino acid number 54 (Arg),
 - (b) an epitope consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 21 (Arg) to amino acid number 53 (Phe),
 - (c) an epitope consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 23 (Leu) to amino acid number 53 (Phe),
 - (d) an epitope consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 23 (Leu) to amino acid number 54 (Arg),
 - (e) an epitope consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 35 (Arg) to amino acid number 41 (Ile),
 - (f) an epitope consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 172 (Arg) to amino acid number 213 (Tyr),
 - (g) an epitope consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 173 (Gly) to amino acid number 198 (Phe),

- (h) an epitope consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 173 (Gly) to amino acid number 199 (Lys),
- (i) an epitope consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 173 (Gly) to amino acid number 200 (Arg),
- (j) an epitope consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 55 (Phe) to amino acid number 172 (Arg), and
- (k) an epitope consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 201 (Leu) to amino acid number 213 (Tyr).

64. (New) A method of producing an antibody to a polypeptide comprising:

(i) inoculating an animal with a polypeptide selected from the group consisting of:

- (a) a polypeptide consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 20 (Ser) to amino acid number 54 (Arg),
- (b) a polypeptide consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 21 (Arg) to amino acid number 53 (Phe),
- (c) a polypeptide consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 23 (Leu) to amino acid number 53 (Phe),
- (d) a polypeptide consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 23 (Leu) to amino acid number 54 (Arg),
- (e) an epitope consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 35 (Arg) to amino acid number 41 (Ile),
- (f) a polypeptide consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 172 (Arg) to amino acid number 213 (Tyr),
- (g) a polypeptide consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 173 (Gly) to amino acid number 198 (Phe),
- (h) a polypeptide consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 173 (Gly) to amino acid number 199 (Lys),
- (i) a polypeptide consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 173 (Gly) to amino acid number 200 (Arg),
- (j) a polypeptide consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 55 (Phe) to amino acid number 172 (Arg),

(k) a polypeptide consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 201 (Leu) to amino acid number 213 (Tyr), and

(l) a polypeptide consisting of the amino acid sequence of SEQ ID NO:13,

wherein the polypeptide elicits an immune response in the animal to produce the antibody; and

(ii) isolating the antibody from the animal,

wherein the antibody specifically binds to a Zins2 testis-specific insulin homolog (SEQ ID NO:13).